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THE IMPACT OF THE AT&T (AMERICAN TELEPHONE AND
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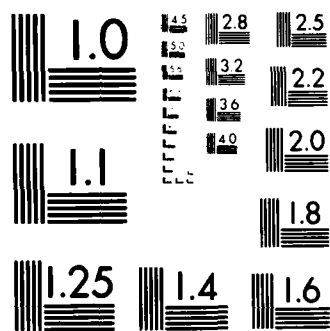
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THE IMPACT OF THE AT&T DIVESTITURE
ON THE STRATEGIC AIR COMMAND

by

Anthony Eric Paulson

B.S., North Dakota State University, 1980

A thesis submitted to the
Faculty of the Graduate School of the
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of the requirements for the degree of
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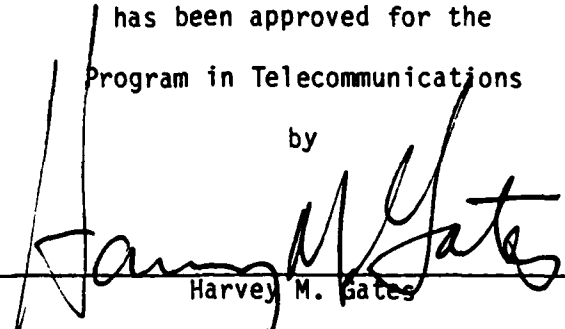
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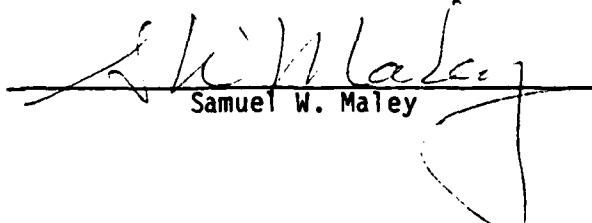
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The Impact of the AT&T Divestiture on the Strategic Air Command

Thesis directed by Professor Harvey M. Gates

This thesis describes the use of commercial telecommunications services by the Strategic Air Command (SAC), how these communications services are procured, the effect of various legal and regulatory actions on these services, and how SAC can adapt to these actions. SAC relies on services supplied by common carriers and telecommunications equipment vendors for a large portion of its command and control systems. The deregulation of the telecommunications industry, the breakup of AT&T, and increased competition has led to confusion, increased leadtimes, and higher costs. However, these effects can be mitigated if SAC places less reliance on AT&T, and begins to develop internal capabilities to manage its networks and to work with multiple vendors.

ACKNOWLEDGMENTS

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Without the love and patience of my wife, Maxine, I doubt I would have completed this thesis. She encouraged me to attend this program, even though it meant a year-long separation. She endured the separation and the times when I have been wrapped up in classes and this thesis.

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DISCLAIMER

The opinions expressed are those of the author, and do not necessarily reflect the views of the Strategic Air Command, the United States Air Force, the Department of Defense, or any other government agency. No classified material was used in the production of this thesis. Review of this thesis by Department of Defense personnel does not necessarily constitute an endorsement.

CHAPTER I

INTRODUCTION

Purpose

The divestiture of American Telephone and Telegraph (AT&T), combined with the deregulation of the telephone industry, is creating confusion for telephone customers of all types. This confusion is especially acute for large users of telecommunications services.

Where previously they could turn to AT&T for end-to-end service, now they must deal with one company for local service, another for customer premise equipment such as telephones, private branch exchanges, and terminals, and still another company for long-distance services. In fact, they may buy customer premise equipment, inside wiring, and long-distance service from several vendors.

In addition to this multitude of vendors, customers are now faced with changes in the cost of telecommunications services. Equipment is being detariffed, charges for local service may become based on usage, "access charges" are being added, and long-distance rates are being reduced.

Also, there is no longer an all-encompassing "Ma Bell," who by default sets the technical standards for telecommunications systems nationwide. The corporate telecommunications manager will have to take greater responsibility for planning his or her system, and for the technical integrity of the corporate network.

One of the largest users of the nation's telephone network is the Department of Defense (DOD). DOD's total bill for telecommunications exceeds \$3 billion annually.¹ Included in DOD's use of leased telecommunications services are a number of critical command and control systems, which support the President, the Joint Chiefs of Staff (JCS), and the nuclear deterrent mission of the Strategic Air Command (SAC). This drastic upheaval of the nation's telecommunications system comes at a time when increasing emphasis and visibility are being given to the military's command, control, and communications (C³) systems.

If the breakup of AT&T creates problems for the corporate telecommunications manager, think of the impact on the military communicator. For a corporation, poorly planned, installed, and maintained telecommunications equipment and services may mean increased cost or lost profits. For the military communicator, the same problems can mean decreased readiness and responsiveness of our nation's forces.

Objective

How will the breakup of AT&T, and the loss of AT&T's end-to-end service, affect the Strategic Air Command's (SAC) command and control? How can military communicators, and SAC communicators in particular, minimize any adverse impact and maximize the benefits of the breakup of AT&T and the increased competition in the telecommunications industry? The objective of this thesis is to answer these

questions. However, in order to answer these questions we must first understand the mission of SAC, SAC's C³ systems, the process used by the Defense Department to obtain communications services, and the judicial, technical, social, political, and regulatory actions which are affecting the telecommunications industry. I hope this thesis will provide an objective look at the impact of divestiture and deregulation on SAC C³, and will serve as an aid to military communicators on how to maintain and improve the effectiveness of our command and control systems in today's confusing and rapidly changing telecommunications environment.

I will not directly address the projected cost impact of the divestiture. The cost of telecommunications services will be affected by actions currently underway at the FCC and in the state regulatory agencies. Like any large user of communications services, the potential for adverse impact on SAC is large. More important than the cost issue is how will the loss of the single entity, for which SAC has depended on for service for command and control, affect SAC and how can SAC best respond.

I will not attempt to defend or attack the decision to break up AT&T. Whether divestiture should or should not have happened is immaterial. It is not practical to put AT&T back together, so we should now address ourselves to the problem of providing the Department of Defense and the Strategic Air Command with the best, most cost-effective telecommunications systems available, even if it means turning our backs on past methods and relationships with vendors.

NOTES - CHAPTER I

¹U.S. Congress, Senate, Committee on Commerce, Science and Transportation, Draft Act Senate 898, 97th Cong., 1st sess., pp. 134-135.

CHAPTER II

SAC AND THE NEED FOR COMMAND AND CONTROL

SAC is both an Air Force major command, as well as a specified command under the Joint Chiefs of Staff. SAC's operational doctrine is to destroy an enemy's war-making capability through the use of nuclear weapons against strategic targets. These strategic targets include factories, transportation facilities, and logistics centers. By being prepared to use this strategy of massive retaliation, the United States hopes to deter nuclear war.¹

In a more practical sense, the command maintains a strategic force of bombers and missiles as a deterrent force. If deterrence fails and war occurs, the command's mission is to engage the aggressor at all levels of confrontation, and to enable the United States to conclude hostilities on favorable terms.²

To accomplish this mission, the command keeps its units in a high state of readiness. SAC's force of intercontinental ballistic missiles is maintained in a constant state of alert. Upon the receipt of an execution order from the National Command Authority, missile combat crew members initiate the immediate launch of the missiles under their control. A percentage of the command's bomber and tanker force is on continuous ground alert.³

The command also develops plans for the use of strategic bombing to resolve conflicts below the level of general war. The command's forces may also be used for enemy sea power interdiction through aerospace operations, antisubmarine warfare, shipping protection, and aerial minelaying operations.⁴

With its headquarters at Offutt Air Force Base near Omaha, Nebraska, the command operates a worldwide network of bases, manned by over 122,000 people, with approximately 1,000 aircraft and more than 2,400 intercontinental and air-launched missiles, and a global communications network.⁵

To provide a credible deterrent force, strategic forces must display a number of characteristics. These include: survivability, penetration ability, striking power, reconnaissance capability, re-strike capability, flexibility, reliability, responsiveness, endurance, and survivable command, control, communications, and intelligence.⁶

Although command, control, communications, and intelligence (C³I) is listed last, it is certainly not the least important characteristic of strategic forces. As the current Commander in Chief of SAC, General Bennie Davis, has said: "C³I is indeed my highest priority item - without survivable command and control you cannot execute your forces."⁷

SAC Command and Control Systems

SAC command and control systems take many forms. A number of systems, utilizing different transmission media, are used to provide

optimal connectivity between the National Command Authority, SAC command posts, and the aircraft and missile wing commanders and crews. These systems include the Air Force Satellite Communications System (AFSATCOM), line of sight and emergency rocket communications system (ERCS) UHF systems, a high-frequency radio net (Giant Talk), and the Survivable Low Frequency Communications System (SLFCS).⁸ In addition to these military owned and maintained systems, SAC uses a number of systems which are dependent on leased equipment and circuits. These systems include the Primary Alerting System (PAS), the SAC Operations Conference System (SOCS), the SAC Automated Command and Control System (SACCS), and ground entry points for the Post Attack Command and Control System (PACCS).

As of November 1980, the annual cost of leasing services for these systems exceeded thirteen million dollars (\$13M). The additional cost of leased communications services for missile warning, aircraft dispersal bases, command post consoles, and the SAC portion of the Joint Chiefs of Staff Alerting Network was over ten million dollars (\$10M), for a total annual cost of over twenty-four million dollars (\$24M).⁹

The Primary Alerting System (PAS) is a voice broadcast system which links SAC headquarters to SAC unit command posts, Air National Guard units which support the SAC mission, aircraft dispersal bases, missile launch control centers, and the Giant Talk and SLFCS sites. The PAS is used to increase the readiness of the alert force, direct the positive control launch of alert aircraft, and relay execution

messages from the National Command Authority.¹⁰ PAS uses dual circuits, under continuous monitoring, to achieve a high level of system availability.¹¹

The SAC Operations Conference System (SOCS) provides a voice network which serves as a backup to the PAS, a conferencing capability for aircraft and missile emergencies, and air-to-ground phone patches through unit command posts.¹²

The SAC Automated Command and Control System (SACCS) is a data communications and display system which links all SAC command posts in the continental United States, Alaska, and Guam. SACCS provides the Commander in Chief, SAC, with information to assess force readiness and a means to broadcast alert and execution messages to SAC units.¹³ While the other systems use both leased circuits and equipment, SACCS equipment is government owned.

The Post Attack Command and Control System is a system of airborne command posts and relay aircraft. These aircraft are used to provide effective and flexible force direction, execution, and control in response to National Command Authority direction during all phases of the Single Integrated Operations Plan. The interface between these aircraft and the above-mentioned systems is through leased ground entry points.¹⁴

Acquisition of Communications Services

The procurement of goods and services (including communications services), by the Department of Defense, is governed by the

Defense Acquisition Regulations (DAR). The contracting office for the Defense Department's long-distance and command and control communications services is the Defense Commercial Communications Office (DECCO), located at Scott AFB.

The policy of the Defense Department, as contained in the DAR, is to obtain goods and services by soliciting bids from all qualified suppliers, to "assure free and full competition."¹⁵ However, the DAR also allows for the procurement of goods and services by negotiation, in specific circumstances. These circumstances include: during a national emergency declared by the President;¹⁶ when the need is so urgent that the government would be injured, financially or otherwise, if the supplies or services could not be procured by a certain date, and they could not be procured by that date by formal advertising;¹⁷ and where it is impracticable to secure competition by formal advertising.¹⁸ Even under these circumstances, "Negotiated procurements shall be on a competitive basis to the maximum practical extent."¹⁹ "When supplies and services are to be procured by negotiation, offers shall be solicited from the maximum number of qualified sources consistent with the nature and requirements of the supplies and services to be procured."²⁰ The DAR places on the contracting officer the responsibility for substantiating that a competitive procurement is not possible, but also for acting to encourage competitive bidding of subsequent procurements.

The DAR also contains specific provisions for the procurement of communications services. The DAR applies to procuring services

from common carriers regulated by the Federal Communications Commission (FCC), but also contains non-binding guidelines for the procurement of non-common carrier services.²¹

The DAR states that when one or more common carriers provide services at a location, the procurement shall be made to the source offering the lowest bid, when practical.²² The DAR gives examples of when the procurement need not to go to the lowest bidder, such as when a higher bidder offers better maintenance, or when system integrity would be jeopardized.²³ The DAR also states the purchase of special assembly items and entire communications systems should be made on a competitive basis, and that every effort should be made to exclude provisions from the service contract which would require the Federal Government to lease from the primary source of service-related circuits or terminal equipment.²⁴

DECCO policy has been to provide long-haul services on an end-to-end basis. This policy dates back to 1968, and holds a single carrier responsible for total circuit engineering, maintenance, and billing, even if a portion of the circuit is supplied by another vendor.²⁵

The systems previously described were engineered by AT&T, and AT&T has also been the sole source contractor for these systems. In cases where parts of the systems are provided by other carriers, AT&T has also served as the single point of contact for the government. This single point of contact means that AT&T will coordinate the actions of any and all vendors, both in day-to-day operations and to

resolve problems.²⁶ An example of this is where GTE provides maintenance of equipment and network services at some SAC bases. It also means that SAC and DECCO only have to deal with one agency, AT&T, for all actions concerning these systems. The justification for this single system manager is that sole source procurement provides a standardized configuration, and timely response for maintenance, new installations, and short notice requirements.²⁷ While the sole source justification says "Operational requirements still dictate the essential need for a single manager of each system," a memo for record appended to the file copy of the justification states that the SAC division chief in charge of communications networks, under whose responsibility the operation of these systems falls, stated that "our request for updating the sole source was that it was [a] procurement problem and not an identification of a requirement of comm[unications] need."²⁸ Another document states that only a single manager can provide for immediate resolution of circuit and equipment problems, that utilizing multiple vendors would destroy system integrity and increase response time, and that the complexity of the systems requires personnel experienced in network and hardware configurations.²⁹ There has been a legal Determination and Finding by DECCO that specifies that AT&T will be the sole source provider for these systems.³⁰

Reliability of the Systems

Outages on these systems are monitored by AT&T, and reported to the SAC Deputy Chief of Staff Communications-Electronics Readiness

Center. When an outage is reported to the Readiness Center, a trouble ticket is prepared containing information on the problem, and the actions taken to resolve the problem. Completed action trouble tickets are kept on file for 90 days. No comprehensive data base is kept by SAC. AT&T does provide a monthly report to SAC covering system availability, mean time between outage, mean time to restore for each system, and significant events such as major outages. However, this report covers only the AT&T portions of the systems involved.³¹ As a result, there is no source, available to the SAC staff, which provides information on the overall performance of these critical systems.³²

However, in December 1981, the National Communications System (NCS) and the Department of Defense did perform an analysis of outages on two categories of NCS Priority One (an explanation of priorities is given in the next chapter) circuits. This analysis covered the period from February 1 through June 30, 1981. The analysis shows that 8.3 percent of the circuits provided on an end-to-end basis by the Bell System experienced an outage, while approximately 31 percent of the circuits provided by a combination of the Bell System and other carriers experienced outages. The analysis also disclosed that for circuits provided exclusively by the Bell System the availability was 96.6 percent, and where multiple carriers were involved the availability was 87.2 percent.³³

Summary

Few people would question that reliable and responsive command and control systems are required for the success of SAC's deterrent

mission. SAC has relied on lease services for a significant portion of its command and control systems. AT&T has been the system manager of these services, both as a provider of equipment and services, and as the "broker" of services where other vendors have been required.

NOTES - CHAPTER II

¹ Air University, United States Air Force Commands and Agencies: Basic Information (Maxwell AFB, AL: Air University Press, 1982-1984 ed.), pp. 9-10.

² Ibid.

³ Ibid., p. 9.

⁴ Ibid.

⁵ Ibid.

⁶ Ibid., pp. 10-11.

⁷ Deborah M. Kyle and Benjamin F. Schemmer, "Exclusive AFJ Interview: Commander-in-Chief, Strategic Air Command, General Bennie L. Davis," Armed Forces Journal, June 1982, p. 30.

⁸ Air University, p. 13.

⁹ SAC Discussion Paper "Commissioner Dawson (FCC) Visit," November 20, 1982.

¹⁰ SAC/DCX message "Embedded CPE FCC Docket No. 81-893," July 29, 1983.

¹¹ Technical Staff, Bell Telephone Laboratories, "A History of Engineering and Science in the Bell System: National Service in War and Peace (1925-1975)," 1978, pp. 601-607.

¹² SAC/DCX message.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Defense Acquisition Regulation (DAR), 2-102.1a.

¹⁶ Ibid., 3-201.

¹⁷ Ibid., 3-202.

¹⁸ Ibid., 3-210.

¹⁹Ibid., 3-101d.

²⁰Ibid., 3-101b.

²¹Ibid., 22-1001.

²²Ibid., 22-1005.1a.

²³Ibid.

²⁴Ibid.

²⁵George Bolling, AT&T: Aftermath of Antitrust (Washington, D.C.: National Defense University Press, 1984), p. 17.

²⁶Ibid.

²⁷SAC letter "Sole Source Justification," May 11, 1983.

²⁸Ibid.

²⁹SAC Talking Paper "SAC Rationale for Need of Single Manager," February 28, 1984.

³⁰Ibid.

³¹Based on discussions with members of the SAC staff during May and June 1984.

³²Ibid.

³³Defense Communications Agency and the General Services Administration, "Comments of the Federal Executive Agencies," CC Docket No. 81-893, June 4, 1982, p. 8.

CHAPTER III

THE POLICY AND REGULATORY ENVIRONMENT

Introduction

In order to fully understand the impact of divestiture on the Department of Defense (DOD) and the Strategic Air Command (SAC), one must understand the policy and regulatory constraints which determine how SAC obtains communications services in support of command and control. These constraints take many forms, the most visible of which is the Modified Final Judgement of the AT&T antitrust case. But, Congressional actions, decisions of the state public utility commissions, FCC decisions, and Presidential Directives also constrain the military communicator. Let us begin with an examination of the Presidential Directives and Executive Orders on national security telecommunications policy, and continue on to the Communications Act of 1934 which created the FCC; the FCC rules and regulations which pertain to national security; the FCC Second Computer Inquiry (CI2); and the Modified Final Judgement.

Presidential Direction

Perhaps the first Presidential recognition of the importance of telecommunications to the national defense came during the Cuban Missile Crisis. President Kennedy found that he was not able to

quickly communicate with U.S. military and government agencies, with the American diplomatic corps overseas, and with heads of foreign governments. As a result, on August 21, 1963, a Presidential Memorandum, "Establishment of the National Communications System," was signed. The Secretary of Defense was designated to serve as the Executive Agent for the National Communications System (NCS), with the objective of providing the communications necessary for the Federal Government under all conditions, ranging from normal day-to-day operations to nuclear attack. By 1983, the NCS had grown to include eleven agencies: the Departments of State, Defense, Interior, Commerce, Energy, and Transportation, the United States Information Agency, the Federal Emergency Management Agency, the National Aeronautics and Space Administration, the General Services Administration, and the Central Intelligence Agency.¹ By February 1984, the NCS had grown to include twenty-two Federal organizations.² The Director of the Defense Communications Agency (DCA) also carries the title of Manager of the NCS.

President Carter addressed the importance of telecommunications to national security.

It is essential to the security of the United States to have telecommunications facilities adequate to satisfy the needs of the Nation during and after any national emergency. This is required in order to gather intelligence, conduct diplomacy, command and control military forces, provide continuity of essential functions of government, and to reconstitute the political, economic, and social structure of the Nation.³

The objectives of the directive called for the Nation's telecommunications system to support connectivity between the National

Command Authority and strategic forces to support a flexible response during and after an enemy nuclear attack; support for the operational control of the armed forces, including control during a protracted nuclear conflict; and the continuity of government during and after a nuclear war or natural disaster.

The directive also went on to establish the principles to meet the objectives. They included: priority in restoration of services and facilities for telecommunications in support of national security and the continuity of government; interoperability and interconnection between interstate common carriers, including the specialized common carriers and domestic satellite carrier, at points outside of likely target areas; for the National Communications System and the Federal Emergency Management Agency to plan for the use of private networks; and for the National Communications System to place "substantial reliance" on private industry for advice and assistance to meet the national security goals.

The Reagan Administration has given strategic command, control, communications a high priority, even if the media has failed to recognize the emphasis. In the same remarks in which he announced his plans for the construction and deployment of the B-1 bomber, the continued construction of the Trident submarine, the completion of the MX missile, and made his "window of vulnerability" statement, President Reagan made a strong statement in support of strategic communications. He said:

I have directed the Secretary of Defense to strengthen and rebuild our communications and control system, a much neglected

factor in our strategic deterrent. I consider this decision to improve our communications and control system as important as any of the other decisions announced today. 4

On September 13, 1982, President Reagan signed Executive Order 12882, which established the National Security Telecommunications Advisory Committee (NSTAC). The NSTAC members, all representing the telecommunications industry, were charged with providing the President with advice on implementing the provisions of PD/NSC-53, improving the telecommunications in support of national security, and review the effectiveness of the implementation of PD/NSC-53.⁵

The chief executive officers or chairmen of 30 of the country's telecommunications organizations serve on the NSTAC. These organizations include AT&T, American Satellite Company, Bell Communications Research, Ford Aerospace, GTE, General Electric, Harris, IBM, ITT, MCI, Northern Telecom, RCA, Rockwell International, ROLM, Western Union, and the U.S. Telephone Association.⁶

To date, one of the main accomplishments of the NSTAC is the creation of the National Coordinating Mechanism (NCM). The purpose of the NCM is to direct and control the reconstitution of telecommunications services in support of national security, among different carriers and vendors, in the event of a national emergency.⁷ More information on the NCM will be included in Chapter IV.

In August 1983, President Reagan signed National Security Decision Directive 97 (NSDD-97), "National Security Telecommunications Policy," which replaced President Carter's PD/NSC-53. NSDD-97 con-

tains many of the provisions of PD-NSC-53, including the continuing of the reliance on commercial telecommunications services to meet critical government communications. NSDD-97 also established a formal Steering Group and gave the Manager of the NCS oversight responsibilities to resolve interagency disputes.⁸

Congressional Action

The main contribution of Congress in the area of national security telecommunications policy is the Communications Act of 1934. Over the years, the Act has been amended, and legislation has been proposed to replace it, but it is still the legislation which created the Federal Communications Commission (FCC), and set forth the guidelines under which the FCC works. (As with all acts of Congress, the Act has been incorporated into the U.S. Code, and all footnotes will refer to the applicable portion of the U.S. Code.)

One of the purposes of the Act was: "... to make available, to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and communication service with adequate facilities at reasonable charges, for the purpose of promoting national defense, ..."⁹

The Act addresses the power of the President to give precedence to communications necessary for national defense and security. Specifically:

During the continuance of a war in which the United States is engaged, the President is authorized, if he finds it necessary for the national defense and security, to direct that such communications as in his judgement may be essential to the na-

tional defense and security shall have preference with any carrier subject to this Act. 10

While not specifically covering communications necessary to support the national defense in crisis short of war, the Act did provide the guidance to the FCC needed to provide a system of prioritization.

The Federal Communications Commission
and National Defense

Over the years, the FCC has incorporated provisions into its rules and regulations which attempt to meet the national security requirements of the Presidential Directives and the Communications Act. They have included provisions for a Defense Commissioner, defense and emergency preparedness procedures, and for a system of restoral priorities for communications vital to the national defense.

From the Commission members, a Defense Commissioner and two Alternate Defense Commissioners are designated to direct the defense activities of the Commission. The duties of the Defense Commissioner include: to keep the Commission informed of significant events in the field of emergency preparedness; to represent the Commission, in meetings with other government agencies, in matters relating to national defense; to act as Defense Coordinator in planning for the continuation of the Commission's essential functions in a national emergency; to serve as the Commission's point of contact on matters concerning the National Communications System; assume the duties of the Chairman

and the Commission in the event an actual or threatened enemy attack results in the Commission being unable to function in their Washington, D.C. office; and to approve national emergency preparedness plans covering the provision of service by common carriers and broadcasters.¹¹ The current Defense Commissioner is The Honorable Mimi Weyforth Dawson.

The Commission also requires its Emergency Communications Division to develop emergency plans for common carrier services under national emergency conditions; to oversee the development of emergency preparedness plans by common carriers for the restoration of essential communications facilities after an attack; and developing and maintaining a capability to determine the effects of an attack on communications services and facilities which are necessary in a national emergency.¹²

This issue of emergency planning, especially joint planning within the telecommunications industry, has concerned many people in recent years. In 1982, Congressman Timothy Wirth, as Chairman of the House Subcommittee on Telecommunications, Consumer Protection, and Finance, wrote to Commissioner Dawson, asking whether there was a mechanism, already in place, to require common carriers to participate in joint emergency planning.¹³ Commissioner Dawson's reply stated, "In sum, the Commission has ample authority to sponsor and, if necessary, to compel participation in planning."¹⁴

Commissioner Dawson's reply also alluded to the Commission's precedence rules for the use of telecommunications in an emergency.

This precedence system is intended to restore essential private line circuits, and "... must be incorporated in the day-to-day operating procedures of the common carriers."¹⁵ Preemption of lower priority circuits is authorized, carriers are expected to cooperate with each other in restoring circuits which carry a restoration priority, and carriers are authorized to honor certified priorities from each other where the circuit involves the facilities of more than one carrier.¹⁶ In the FCC's system, the highest priority is given to circuits which support intelligence collection and dissemination, disseminates or collects information vital to the internal security of the country, the conduct of diplomatic negotiations for the conclusion or limitation of hostilities, the execution of command and control of military forces vital to defense and retaliation, warn the population of the United States, or maintain the continuity of government.¹⁷ Subpriorities within this priority are reserved for the use of Federal government agencies. It would appear that the circuits supporting the SAC command and control systems discussed in the previous chapter would be eligible to carry a high priority within the FCC priority system. This portion of the FCC Rules provides the authority for the NCS's priority system.¹⁸ The directive that governs how restoral priorities are assigned within DOD is classified.

In recent years, the FCC has issued a number of rulings which are aimed at promoting competition. Perhaps the most visible of these rulings is the Second Computer Inquiry, also known as Computer Inquiry II. The Second Computer Inquiry resulted in several major actions, to

take effect on January 1, 1983. First, customer premise equipment would no longer be priced according to tariffs, but would become de-tariffed. Second, traditional phone service would continue to be regulated, but computer information system processing would be deregulated. Third, as the dominant carrier, AT&T was required to create a fully separate subsidiary to market new customer premise equipment and "enhanced services."¹⁹ The full subsidiary was first called American Bell, and is now known as AT&T Information Systems or AT&TIS. Computer Inquiry II also forbid the operating companies from supplying new customer premise equipment during the period from January 1, 1983 to January 1, 1984. They could, however, supply customer premise equipment from their existing inventories, the "embedded base."

How this action has affected SAC will be discussed in the next chapter.

The Modified Final Judgement

In 1974, the Department of Justice filed an antitrust suit against AT&T, alleging,

... the defendants and co-conspirators have engaged in an unlawful combination and conspiracy to monopolize, and the defendants have attempted to monopolize and have monopolized, the aforesaid interstate trade and commerce in telecommunications services, ... 20

For six years, the suit was bogged down in a chain of legal maneuvers. During the transition period prior to President Reagan's inauguration, AT&T and the Justice Department initiated discussions on

a possible settlement, but the negotiations broke off during the new administration's transition into office.²¹

On February 21, 1981, Defense Secretary Weinberger sent a letter to the new Attorney General, William French Smith. In the letter, Weinberger said,

The Department of Defense recommends very strongly that the Department of Justice not require or accept any divestiture that would have the effect of interfering with or disrupting any part of the existing communications facilities or network of the American Telephone and Telegraph Company that are essential to defense command and control.²²

Deputy Secretary of Defense Carlucci reiterated Secretary Weinberger's position in a letter to Assistant Attorney General Baxter: "Accordingly, it is the position of the Secretary of Defense that the pending suit against the American Telephone and Telegraph Corporation be dismissed."²³

On April 9, 1981, Assistant Attorney General Baxter held a press conference in which he said that while he took the Defense position seriously, he did not intend to "fold up my tent and go away because the Department of Defense expressed concern."²⁴

The next day, Baxter released a statement saying, "the concerns of the Department of Defense will be fully taken into account in connection with any divestiture order that the Department of Justice might seek in the case."²⁵

The Department of Defense continued to express its concern over the adverse impact of a divested Bell System on telecommunications in support of the national defense. The Defense Department,

like everyone else, was surprised when the settlement of the antitrust suit was announced on January 8, 1982.

By now, most people are aware of the general provisions of the antitrust settlement. However, one of the less well known provisions of the settlement concerns allowing the divested Bell Operating Companies to create a centralized organization to provide the operating companies with the engineering and administrative services which could best be provided on a centralized basis. The settlement also required the Bell Operating Companies to provide a single point of contact, through a centralized organization, to coordinate the actions of the operating companies in the areas of national security.²⁶

From the wording, it is not clear whether the operating companies were required to provide this single point of contact, or whether they would be required to provide this single point of contact only if this centralized organization was created.

The Defense Department submitted a number of comments to Judge Greene concerning the terms of the settlement. Judge Greene stated that some of Defense's recommendations required no action by the Court because they concerned matters of definition, were theoretical in nature, or discussed problems which were not a part of the settlement.²⁷ However, he did state that he expected the AT&T Plan of Reorganization to address the Defense Department's concerns about the scope of the single point of contact.²⁸ These concerns included the lack of a requirement for the operating companies to commit specific resources to the single point of contact; the funding and regulatory

status of the point of contact; and the authority of the point of contact to direct the operations of the operating companies.²⁹ One must remember that this centralized organization would be a staff organization, owned by the operating companies as a whole, and not a "parent" organization.

The Department of Defense prepared a summary of the functions they would like in the operating companies' single point of contact. It appears that Defense wanted the point of contact to serve as a national control center and account executive for the entire Defense Department, providing for the consolidation of bills and centralized status monitoring of essential telecommunications services. The Defense position also called for the operating companies to be allowed to preempt non-essential services to restore critical national security circuits, but only when requested to do so by government. This recommendation is not as responsive to national security needs as the current rules of the FCC, which require all common carriers to preempt circuits on a day-to-day basis, without a specific request, to restore circuits which carry a restoration priority.

Not all of the Defense Department's recommendations were included in the AT&T Plan of Reorganization, although some were included in the NSTAC plan for a National Coordinating Mechanism, which will be discussed in the next chapter. The Plan of Reorganization directed the BOCs to establish a government communications group within their central organization, with the functions of developing and implementing uniform technical standards and emergency plans for the BOCs, to

serve as the single point of contact for the BOCs in the event of a national crisis or emergency, expediting BOC service to meet national security needs, and to coordinate the activities of the BOCs when more than one BOC is involved in meeting national security needs.³⁰ The Plan included the establishment of a continuously operating system for alerting the BOCs in the event of an emergency.³¹ However, the plan forbade the central organization and the BOCs from selecting long-distance carriers and customer premises providers for the government, but directed the BOCs to cooperate fully with the long-distance and equipment vendors chosen by the government.³² The Plan also included provisions to ensure adequate personnel, resources, and authority over the BOCs in national security matters, to allay some of the Defense Department's concerns.³³

This central organization was originally called the Central Staff Organization, then the Central Services Organization, and is now called Bell Communications Research.

AT&T's post divestiture responsibilities to national security were not forgotten. AT&T was required to retain its government communications organization within its regulated entity (AT&T Communications). This organization was directed to serve as the government's point of contact with the AT&T affiliates, both for emergency situations and for long-term needs. The plan also allowed for the government communications organization to coordinate national security/emergency preparedness communications needs which require the interconnection between AT&T services and those of other carriers.³⁴

Another lesser known aspect of the Court's decision is that Cincinnati Bell and Southern New England Telephone were not divested from AT&T, since AT&T owned less than 50 percent of the stock in them.³⁵ This means these two companies will not be affiliated with Bell Communications Research, as the other Bell Operating Companies will, for meeting national security needs. Instead, they will interact with AT&T Communications.

Summary

Recent events have resulted in a massive upheaval of the telecommunications industry. We no longer have a single organization which provides end-to-end communications for the majority of the nation. Besides confusing the average man on the street and large and small business, this situation has the potential to seriously impact national defense.

NOTES - CHAPTER III

¹National Communications System, "Two Decades of Progress in Telecommunications," Undated; and National Communications System, "Organizations and Functions," August 1, 1983, p. 1.

²Telecommunications Reports, Vol. 50, February 20, 1984, p. 15.

³Presidential Directive PD/NSC-53, "National Security Telecommunications Policy," November 15, 1979.

⁴The White House, Weekly Compilation of Presidential Documents, Vol. 17, No. 40, October 2, 1981, pp. 1074-1076.

⁵The White House, Weekly Compilation of Presidential Documents, September 13, 1983, p. 1138.

⁶"National Security Telecommunications Advisory Committee," Signal, May 1984, p. 78.

⁷LTG Winston D. Powers, "NSTAC: A Joint Industry/Government Entity Working on National Security/Emergency Preparedness Communications Issues," Signal, May 1984, p. 75.

⁸Telecommunications Reports, pp. 15-16.

⁹47 U.S.C. 151.

¹⁰47 U.S.C. 606.

¹¹47 C.F.R. 0.181.

¹²47 C.F.R. 0.183.

¹³Letter from Congressman Timothy Wirth to Commissioner Dawson, September 30, 1982.

¹⁴Letter from Commissioner Dawson to Congressman Timothy Wirth, undated.

¹⁵47 C.F.R. Appendix A, para. 2.

¹⁶Ibid., para. 2-3.

¹⁷ 47 C.F.R. 64 Appendix A, para. 8a.

¹⁸ Discussion with Captain Michael Weinstein, AFCC Judge Advocate Office, January 1984.

¹⁹ George Bolling, AT&T Aftermath of Antitrust (Washington, D.C.: National Defense University Press, 1983), pp. 34-35.

²⁰ U.S. District Court for the District of Columbia, Civil Action No. 74-1698.

²¹ Bolling, p. 50.

²² Secretary of Defense, Letter to the Attorney General, February 21, 1981.

²³ Deputy Secretary of Defense, Letter to Assistant Attorney General Baxter, April 8, 1981.

²⁴ Department of Justice, Transcript of Press Conference of William F. Baxter, Assistant Attorney General, Antitrust Division, with members of the press, April 9, 1981, p. 7, as cited in Bolling, p. 52.

²⁵ Department of Justice, Press Release, April 10, 1981.

²⁶ U.S. District Court for the District of Columbia, Civil Action No. 74-1698 and 82-0192, Stipulation for Voluntary Dismissal, January 8, 1982.

²⁷ 552 F. Supp. 131 (1982), p. 209.

²⁸ Ibid.

²⁹ Ibid.

³⁰ AT&T Plan of Reorganization, December 16, 1982, p. 418.

³¹ Ibid., pp. 420-421.

³² Ibid., p. 420.

³³ Ibid., pp. 422-423.

³⁴ Ibid., pp. 423-424.

³⁵ American Telephone and Telegraph, 1981 Annual Report, January 24, 1982.

CHAPTER IV

THE IMPACT ON SAC

As a result of the changes in the telecommunications regulatory environment, old ways of doing business no longer work. There is no longer an all encompassing "Ma Bell." Consumers of telecommunications services are having to deal with multiple vendors, wait longer for service, and receiving faulty equipment.

How has the Department of Defense, and SAC in particular, been impacted, and how have they reacted? In June of 1983, the Director of DCA said, "In a word, our military communicators who do the C³ work supporting our CINC's, combat commanders and support forces are having a difficult time getting many of their requirements met."¹ As we shall later see, regulatory relief from the provisions of the Second Computer Inquiry decision has been sought and granted for emergency and national security requirements. A National Coordinating Center has been jointly established by the Defense Department and industry, to provide joint planning and emergency response capabilities. Unfortunately, in some instances, military communicators are still trying to conduct "business as usual," and ignoring the possible benefits that come with competition.

Impact of Computer Inquiry II

Some of the results of Computer Inquiry II would be comical, if they did not involve national defense. The Defense Department has

documented how the service offered to the military by AT&T and the Bell Operating Companies has been reduced. Some of the cases can be attributed to temporary confusion as personnel changes take place, and new regulations take effect. Others may be indicative of the future of the service Defense can expect.

In the six-month period after the implementation of Computer Inquiry II, American Bell (now AT&T Information Systems) delivered defective hardware, incomplete equipment packages, and has been late in meeting required service dates.² Where the leadtime for some services was 30 days, now leadtimes of two to three months are required.³ American Bell has told users they do not have an item in stock, only to discover it later, after the required service date.⁴ American Bell has also refused to market customer premise equipment needed by the Defense Department, because of low profit margins.⁵ The Director of DCA suggested that use of alternate sources of equipment on a competitive basis might improve American Bell's responsiveness.⁶

During the same period, problems were also experienced with the local operating companies. Circuits were being cutover late because of the unwillingness of telephone companies to pay their crews overtime.⁷ Like American Bell, the local companies were having trouble knowing what equipment was in their inventory.⁸ And, in one case, a local telephone company refused to extend an FAA circuit to a radar approach control in support of an Air National Guard exercise, since the requirement for the circuit was for less than 30 days.⁹

The Department of Defense also found that in some cases common items of equipment were now being classified as special assembly items, at an increased cost.¹⁰ After January 1, 1983, telephone companies began trying to sell the base cable system to the government, in conjunction with selling the government new equipment. This resulted in the quotes for one job going from \$8,000 to \$66,000. The difference? The \$8,000 quote was made prior to January 1, and the \$66,000 quote was made after January 1, and included cabling.¹¹

Some of the instances documented deserve specific mention. During Readiness Command's GALLANT KNIGHT exercise, a 9.6 kbs modem was delivered to Fort Bragg without connector cables or connectors. Two days later, an American Bell technician made the one-hour drive out to Fort Bragg to correct the situation.¹² During the same exercise, telephone company installers left level and continuity problems on data circuits, rather than work overtime.¹³

At Hollman AFB in New Mexico, Mountain Bell ceased work on a prototype command post console for the Tactical Air Command when Mountain Bell's chief engineer went to work for American Bell.¹⁴

During this time, SAC noted problems in obtaining some customer premise equipment and having operational dates for circuits met on time.¹⁵ When American Bell or the local phone company were unable to provide equipment, other vendors were approached, but SAC said that competitive bidding produced time delays which "are not acceptable if mission requirements are to be met."¹⁶ And, The proliferation of products does not lend itself to end-to-end service

which we require."¹⁷ SAC also raised question of the problems created by having multiple vendors providing service on a base. As they put it, "For example, it would be possible to have an Executone telephone, Bell wiring and key systems, and an independent cable plant on one base. If the phone doesn't work, who is called?"¹⁸

While none of these cases resulted in a serious degradation of national security or threat to life, the potential danger was there.

In addition, some of the examples cited involved support for exercises. While the failure to communicate during an exercise does not immediately jeopardize national security, it may increase the risk of hazards to personnel and resources. Also, exercises are more than just "war games." They provide an opportunity to show how well our forces can carry out their mission. If an exercise fails due to the lack of communications services, allies and enemies may begin to doubt our ability to respond during an actual crisis.

Waiver of Computer Inquiry II

On January 5, 1983, not even a week after the Computer Inquiry II decision was implemented, AT&T petitioned the FCC for AT&T Communications and the Bell Operating Companies to be allowed to provide limited amounts of new customer premise equipment to the Department of Defense and other government agencies, to meet national security and emergency preparedness needs.¹⁹ The waiver was to be temporary, expiring upon the implementation of divestiture on January 1, 1984.

The request was made at the request of the DOD and other members of the NCS, and DOD filed supporting comments. Both DOD and AT&T cited DOD's need for single system management of command and control systems and for rapid response in emergencies such as the movement and housing of Cuban refugees. The waiver would allow the DOD to turn to AT&T Long Lines (now AT&T Communications) or a Bell Operating Company for end-to-end service.²⁰

GTE and MCI filed comments objecting to the proposed waiver. GTE stated that national security and emergency preparedness requirements do not necessarily require sole source procurement, and proposed that a list of systems to be covered by the waiver be submitted.²¹ MCI argued that the waiver would have the effect of delaying for a year or more its opportunity to enter the government market.²²

The Commission chose to grant the waiver, with modifications. In the event of Presidentially declared emergencies, and other emergencies as described in DCA publications, AT&T Long Lines or a BOC could supply end-to-end service, including new customer premise equipment. For critical national security systems, if sole source procurement was justified, AT&T Long Lines or a BOC could provide equipment, but only if the equipment was already in the company's inventory (embedded base). If the equipment required is not in the embedded base, then AT&T or the BOC would notify the government of that and identify at least one unaffiliated source of the equipment. The government agency involved would then specify the equipment provider. The waiver was to expire on January 1, 1984,²³

In August 1983, DOD identified to the FCC twenty-one systems for which it wanted the CPE to remain with AT&T Communications, rather than being fragmented among several entities, and to allow AT&T Communications to continue its single system manager role. On November 23, 1983, the FCC granted the request. This waiver was to extend until June 1, 1984, and AT&T and the DOD were to develop a plan to meet the government's CPE needs past that date.²⁴

The twenty-one systems involved were:²⁵

1. Automatic Secure Voice Communications Network
2. Joint Chiefs of Staff Alerting Network
3. Minuteman²⁶
4. SAC Primary Alerting System
5. SAC Operational Conference System
6. SAC Command Post Consoles
7. North American Air Defense Command (NORAD) Alerting System
8. Tactical Air Command (TAC) Command and Control Alerting System.
9. TAC Force Control Management System
10. Military Airlift Command (MAC) Operational Phone System
11. Air Force Digital Graphics System
12. Air Force Command Post Alerting System
13. Air Force Command Post Record Capability
14. Federal Aviation Administration National Airspace System
15. Federal Emergency Management Agency (FEMA) National Voice System

16. FEMA National Warning System
17. A classified FEMA system
18. The Emergency Broadcast System
19. Nuclear Regulatory Commission (NRC) Emergency Notification System
20. White House Communications Agency (WHCA) Transportable Electric Consoles
21. WHCA Echo Fox Radio System.

On December 14, 1983, AT&T filed a petition with the FCC requesting a permanent extension of the waiver.²⁷ This petition was also supported by DOD. GTE filed comments opposing the waiver, claiming that while a single system manager may be necessary, it does not necessarily have to be AT&T. GTE also submitted documentation which showed that DECCO had given AT&T a sole source contract for an upgrade to the SAC Operations Conference System.²⁸ The Chief, Common Carrier Bureau, approved an extension of the waiver until May 31, 1984. The upgrade to the SAC Operations Conference System will be discussed in greater detail in the next section.

The current waiver has been extended until December 31, 1984.²⁹ Currently, the FCC is considering four options to both allow the DOD to obtain CPE and to maintain the competitive principals of Computer Inquiry II. The four options are:³⁰

- (1) permanently extending the current waiver, which applies to AT&T Communications and the Bell Operating Companies;

- (2) ownership of CPE associated with national security and emergency preparedness by AT&T Communications, and allowing AT&T Communications to provide new CPE as part of its end-to-end service;
- (3) making Bell Communications Research the industry single point of contact for all national security and emergency preparedness needs, and for coordinating service and equipment to meet those needs;
- (4) transfer of all embedded CPE associated with national security and emergency preparedness to AT&T Information Systems (AT&TIS), and requiring AT&T to provide new CPE for those needs only through AT&TIS.

Even with the waiver, problems were encountered in obtaining service. During SAC's worldwide Global Shield '84 exercise, two SOCS circuits were ordered, but never completed. One of the reasons cited by SAC for the non-completion of the circuit was "ATTIS failure to issue orders for long lines facilities with sufficient leadtime."³¹

I do not want to give the impression that the Department of Defense has not attempted to competitively procure communications services. Within the Air Force there are programs underway to competitively procure complete telecommunications systems (SCOPE EXCHANGE) as well as stand alone central offices (SCOPE DIAL). Long-distance service is being competitively procured, where possible (SCOPE COLD). The staff at Air Force Communications Command has encouraged the use of competitive procurements.

A review of the Commerce Business Daily (CBD) back to October 1982 also reveals some attempts by DECCO to compete some of their procurement actions. DECCO has placed notices in the CBD for satellite links between Ft. Meade, MD and Cheyenne Mountain, CO,³² between Cheyenne Mountain and Fylingsdale Royal Air Force Base in the United Kingdom,³³ and between U.S. Naval Facility, Adak, AK and Naval Ocean Systems Center, San Diego, CA.³⁴ A notice was also placed soliciting vendors for a leased telephone system for Defense users on the island of Oahu.³⁵ DECCO has also solicited vendors interested in "end-to-end communications service on low dollar value requirements."³⁶ Responses to this notice were received from eighteen vendors, including American Satellite, American Bell, AT&T Long Lines, Continental Communications, GTE, Tymnet, Western Union, Codex, ROLM, and Northwest Bell.³⁷ On May 9, 1983, DECCO again advertised for vendors, this time for vendors wishing to provide end-to-end service for emergency and urgent requirements.³⁸ Unfortunately, these notices solicited vendors for situations where the vendor will have either low profit potential, not being able to plan for personnel and resource requirements, or AT&T did not furnish the service.

No notice was found asking for vendors interested in providing single system management for any of the twenty-one previously cited command and control systems.³⁹ However, GTE Service Corporation is interested in providing this service.⁴⁰

SOCS Upgrade

This is an appropriate place to discuss the upgrade to the SAC Operations Conferencing System (SOCS). This upgrade is of interest since it is the first SAC command and control system to undergo a major upgrade under the waiver to Computer Inquiry II, and since GTE has objected to some aspects of the procurement.

As previously stated, SOCS is a system which provides backup capability to the Primary Alerting System, conferencing capability for aircraft and missile emergencies, and air-to-ground phone patches. A Dimension⁴¹ switch is used at Offutt AFB to provide switching capability. At other locations, the SOCS is integrated into the base administration switchboard, although it does appear at a different switchboard position.

On September 30, 1983, Mr. Clifford G. Maxwell of GTE Service Corporation, wrote to DECCO stating "Through the GTE Operating Telephone Companies serving March and Little Rock Air Force Bases, we have been advised that AT&T Information Systems (AT&T IS) has received a SAC Command Post Upgrade cost inquiry from DECCO." The letter stated that the inquiry reportedly calls for AT&TIS to perform a nationwide update of the system, and that SAC had circulated a description of the proposed upgrade on August 29, 1983. Mr. Maxwell went on to state, "The SAC upgrade package indicates that Dimension equipment is to be utilized throughout." The reports he had received alleged that AT&TIS had been given a sole source contract for the entire system, and there

would be no competitive procurement for the lower level modules, such as switching nodes and command post consoles.⁴²

Mr. Maxwell then asked DECCO why sole source procurement to AT&TIS as the system manager was justified, why lower level modules could not be competitively procured, and why weren't the telephone companies presently serving March and Little Rock being given the opportunity to provide the service.⁴³

The DECCO reply stated "The SAC Operations Conference system (SOCS) has been justified under the FCC waiver to Computer Inquiry II for sole source procurement."⁴⁴

As I understand the waiver, the waiver does not justify sole source procurement, but if sole source procurement is separately justified, AT&T can provide single system management functions.

The letter stated DECCO planned to contract with AT&T Long Lines as the single system manager, but that AT&T would have to identify at least one unaffiliated source of CPE, if one exists. The reply concluded by saying "We regret any misunderstanding that may have been created by the SAC 'survey' which apparently utilized some assistance from AT&T Information Systems [emphasis added] (ATTIS). ATTIS had no inquiry from DECCO and has not been given a sole source contract."⁴⁵

On November 8, GTE Telephone Company of California wrote to DECCO, stating they were interested in the upgrade program at March AFB and Vendenberg AFB, where GTE is the local phone company. GTE requested that DECCO inform AT&T Long Lines of their interest.

On November 17, 1983, DECCO sent a letter to the AT&T Long Lines representative at Scott AFB, requesting AT&T Long Lines "provide, install, and maintain a replacement capability for Strategic Air Command's (SAC) Numbered Air Forces and Unit Command Posts, including the requirement to interconnect these command posts into an integrated network ..."⁴⁶ [Emphasis added.] The letter also states that if new customer premise equipment is required, Long Lines should provide information on the cost and delivery date of the equipment from an AT&T affiliate and an unaffiliated source. A desired service date of August 31, 1984, was requested, and Long Lines was requested to provide a proposal to DECCO by December 13, 1983.

The statement of work (SOW) for the upgrade specified a number of requirements for the network, including electronic networking, controlled remote maintenance capability, centralized control and testing capability, and the requirement for the presently installed Dimension switch at Offutt to remain.⁴⁷ AT&T Communications stated that they compared private branch exchanges (PBXs) offered by nineteen vendors against the requirements. AT&T determined that only five of those switches could provide the electronic networking capability. After looking for compatibility with the Dimension's Customer Administration Center System (CACS) and Remote Maintenance Administration and Testing System (RMATS), AT&T Communications engineers determined that AT&TIS and one other unnamed vendor could potentially satisfy the requirements. In consultation with Western Electric and an unnamed consultant, AT&T determined they

... could not affirm the non-AT&T's switch's compatibility to the Dimension System equipped with CACS and RMATS. As a result we determined that the only PBX that could meet the requirements of SAC's SOW would be the AT&T Information Systems' Dimension PBX. 48

On November 22, Mr. W. A. Bittenbender, the AT&T Long Lines National Account Manager for SAC, informed DECCO that after evaluating potential vendors, only AT&T Information Systems could meet all the required specifications. Mr. Bittenbender then asks that DECCO inform him no later than the close of business of the next day whether DECCO wished AT&TIS to be the CPE provider.

On November 23, DECCO informed Mr. Bittenbender that: "The Government desires that AT&T Communications deal with AT&T Information Systems as the CPE vendor for the Unit Command Post Upgrade."⁴⁹ DECCO asked that AT&T provide DECCO with the numbers of vendors considered and their names, and the factors used in determining that AT&TIS was the sole vendor who could meet the requirements. The AT&T proposal, submitted on December 13, provided the numbers of vendors considered, and the factors used in arriving at their determination that AT&TIS was the sole vendor who could meet the requirements.⁵⁰

Several questions are raised by this string of correspondence, both in terms of the government's RFP and the AT&T response. First, did AT&TIS assist in writing the SOW? The DECCO response to GTE's original inquiry indicates that AT&TIS may have had some input into SAC's original "survey." In any event, why didn't the request for proposal ask AT&T Communications to provide two proposals, one showing

the cost, operational, and technical impact of replacing the Dimension switch at Offutt, and one showing the impact of keeping it. This would have allowed SAC to determine which method was most suitable for meeting its needs. By AT&T Communications' own admission, this would have put at least five PBX vendors in the running for selection.

AT&T Communications selected the CPE vendor in less than a week. They still had over three weeks until the proposal was due, and they could have requested DECCO choose the CPE vendor when they submitted the proposal. This would have allowed them to actually consult with the potential vendors. Note that AT&T did not state that they had determined that no switch would interface with the Dimension at Offutt, just that they could not "affirm" that it could. Why did they not directly consult with the other potential vendor, rather than relying on their own engineers, Western Electric engineers, and an unnamed consultant? And why did they need a response from DECCO on the selection of AT&TIS as the CPE vendor by the end of the next business day?

Why didn't DECCO seek independent verification of AT&T's claim that AT&TIS was the only vendor capable of providing CPE? Also, while AT&TIS is the AT&T organization which provides CPE, other companies market Dimension equipment, including subsidiaries of the Bell Operating Companies. AT&T did not state whether any other vendor could provide the required Dimension equipment. Why not? GTE would later bring these questions up.⁵¹

In December, both GTE Telephone Company of the Southwest and GTE Telephone Company of California expressed interest to AT&T Communications in being a subcontractor to AT&TIS, at the bases where they currently provided service.⁵²

On January 13, 1984, AT&T Communications accepted a Communications Service Authorization from DECCO for the SAC Command Post Upgrade.⁵³

In May of 1984, GTE wrote to DECCO objecting to the SOCS procurement action, raising the questions previously cited. GTE said:

The FCC waiver of CI II was not intended to stifle competition, however, the net effect of the ATTCOM [AT&T Communications] and DECCO actions is a suppression of competition. The waiver was intended to become effective only after an independent justification of sole sourcing under the well-established laws of Government procurement. Instead, it appears the process was reversed and the waiver was used as the basis for the non-competitive procurement. [Emphasis added.] 54

The letter also said

We have tried to emphasize to DECCO that the SOCS program was of special interest to GTE Telephone Operating Companies (GTOCs) and that the GTOCs very much desired to continue their participation in the program by providing network services and Customer Premise Equipment (CPE), ... 55

On May 18, 1984, DECCO wrote to Mr. Bittenbender, requesting that he provide comments to the GTE letter of the 14th, and provide "the names of vendors and the technical or operational factors considered in arriving at the AT&T determination that only ATTIS can meet all requirements ... as requested by the 23 November 1983 DECCO letter."⁵⁶

Despite the terms of their proposal, AT&T Communications informed SAC in May 1984 that they would be unable to provide sufficient Dimension equipment during the contract period.⁵⁷ The current approach put forth by AT&T, and agreed to by SAC, is to begin by installing Dimension equipment, and then "migrating" to AT&T System 75⁵⁸ switches.⁵⁹ Replacement of the Dimension switch at Offutt is also under consideration.⁶⁰

That is how the situation currently stands. Besides the questions raised by the original RFP and the AT&T proposal, why isn't the system being competitively bid at this time, now that every switch in the system may be replaced? That would seem to give SAC the greatest number of options. The SAC rationale that multiple vendors would increase response time fails to hold up, given DOD's documented complaints of the lack of responsiveness of AT&T in recent months. Another rationale that is frequently given is "The network is complex and requires experienced personnel knowledgeable in network and hardware configuration. AT&T designed, manufactured, installed and now maintains this system."⁶¹ However, with the changes in personnel and organization which AT&T has experienced in the recent past, these experienced personnel may no longer be in a position to help maintain SOCS. The "old AT&T," under which the sole source procurement justifications were written no longer exists, and the "new AT&T" is not as responsive. Additionally, the statement ignores that other corporations can put together complex networks, and that in some cases GTE has installed and maintains SOC equipment. GTE currently provides

single system management for the Joint Surveillance System, and manages large private networks for business users. Also, Boeing Computer Services provides communications network management for business and government users.

SAC must position itself to take advantage of today's competitive telecommunications environment if it is to receive responsive, cost-effective, reliable service. As long as SAC asserts that sole source procurement of command and control systems to AT&T is justified, and accepts the service that AT&T offers, AT&T has little incentive to improve the service it offers.

The Impact on Reliability

While it has become more difficult to obtain new services, at least the availability and performance of services already in place have not suffered. Since SAC does not maintain its own data base of outages and other network problems, it is difficult to perform an independent assessment of how service has been affected. However, discussion with members of the SAC staff discloses that the performance of SAC leased command and control systems has not suffered any significant degradation since Computer Inquiry II and divestiture took effect, and, in some cases, system performance has improved.

The National Coordinating Mechanism

One of the areas that the NSTAC addressed was finding and creating the most cost-effective way for the industry to meet the

nation's national security and emergency preparedness (NS/EP) needs.

On January 3, 1984, the National Coordinating Center (NCC) went into operation to meet these needs.⁶² The mission statement of the NCC is short and to the point:

The mission of the National Coordinating Center is to ensure that the critical telecommunications needs of the Federal Government can be and are satisfied in any emergency or crisis situation.⁶³

Under Section 606 of the Communications Act of 1934 (War Powers of the President), government representatives would direct the actions of the NCC industry representatives.⁶⁴ At other times, consultation between the government and industry representatives will be used to develop response plans and coordinate the response of industry to emergency and crisis situations.⁶⁵ The NCC also becomes involved when industry representatives need assistance in meeting NS/EP needs; the Federal agency needing service declares that normal procedures will not result in sufficient service to meet NS/EP needs; or the scope of NS/EP service requires coordination across several states, companies, or organizations.⁶⁶

Since the NCC is co-located with the DCA Operations Center,⁶⁷ the government representatives come from the NCS and DCA, and are available around the clock. The industry representatives have access to the authority to direct the use of their corporate resources to meet NS/EP needs.⁶⁸

The NCC will perform the following functions:⁶⁹

1. Provide prompt technical analysis of service disruptions and identify restoral actions.
2. Coordinate and direct the prompt restoration of services in support of NS/EP needs.
3. Develop and exercise comprehensive service restoration plans.
4. Work through industry operations centers to monitor the status of essential telecommunications facilities.
5. Maintain access to an accurate inventory of resources available for restoration actions.
6. Identify liaison points in each company.
7. Be capable of rapidly transitioning from normal to emergency operations.
8. Coordinate, direct, and expedite the installation of new services to meet NS/EP needs.
9. Assist in the development and application of technical standards and network planning to meet NS/EP needs.
10. Coordinate and direct network reconfiguration plans to support NS/EP needs.

The initial industry members are: American Satellite Company, AT&T, Bell Communications Research, Communications Satellite Corporation, General Telephone and Electronics (includes Sprint), MCI (includes Western Union International), Radio Corporation of America, Western Union, Pacific Telecommunications (includes Alascom), and the

U.S. Independent Telephone Association. These twelve organizations provide 93.8 percent of the circuits which carry NCS/FCC restoral priorities. Except for the 5.7 percent of restoral priority circuits in Europe provided by Allied Long Lines Agencies, only 0.5 percent of all restoral priority circuits are provided by entities not initially participating in the NCC.⁷⁰

The NCC will be funded partially by the Federal Government and partially by the companies and organizations represented.

The NCC has the potential to greatly ease some of the fears associated with the divestiture of AT&T. Since it will address the issue of standards, this will allay some of the concern over interoperability of various carriers. Additionally, it provides a mechanism where the Federal Government can attempt to meet its needs for NS/EP needs in a competitive environment.

Summary

The divestiture of AT&T has drastically changed the environment from which SAC must obtain its telecommunications systems. Delays and cost increases have been encountered. In response, the Department of Defense has sought, and received, partial relief from the FCC. Also, industry has been cooperative in forming an entity where some of the problems created by divestiture can be attacked. Unfortunately, while the FCC and industry have been flexible in trying to meet SAC's and the DOD's needs, SAC and the DOD have not shown equal flexibility. Rather than adapting to the changed environment, SAC has

attempted to do business as usual, using waivers and sole source procurements. This reaction not only leaves SAC and DECCO open to attack from AT&T's competitors, but may reduce the capability of SAC command and control systems, and increase their cost.

NOTES - CHAPTER IV

¹DCA Memorandum, Impact on DOD of the Federal Communications Commission's Computer Inquiry II Decision and the Pending Divestiture of the Bell System, June 23, 1983. This Memorandum is in reality a letter with two enclosures. Each of the enclosures is tabbed into sections. I will identify future reference by enclosure and tab. This quote is from the cover letter.

²Ibid., Enclosure 1, Tab A.

³Ibid.

⁴Ibid.

⁵Ibid.

⁶Ibid.

⁷Ibid., Enclosure 1, Tab B.

⁸Ibid.

⁹Ibid.

¹⁰Ibid., Enclosure 1, Tab C.

¹¹Ibid.

¹²Ibid., Enclosure 2, Tab B.

¹³Ibid.

¹⁴Ibid., Enclosure 2, Tab C.

¹⁵Ibid., Tab E.

¹⁶Ibid.

¹⁷Ibid.

¹⁸Ibid.

¹⁹FCC Memorandum, Opinion and Order, ENF 83-113, released April 12, 1983, p. 1.

²⁰ Ibid., pp. 2-3.

²¹ Ibid., p. 4.

²² Ibid., p. 5.

²³ Ibid., p. 7.

²⁴ DCA Memorandum, Waiver of FCC's Computer Inquiry II Decisions for Selected Command Control and Communications Systems, December 1, 1983.

²⁵ Ibid.

²⁶ This refers to communications organic to the Minuteman intercontinental ballistic missile system.

²⁷ GTE Comments, ENF 83-113, December 19, 1983, pp. 1-2.

²⁸ GTE Additional Comments, ENF 83-113, December 27, 1983.

²⁹ Telecommunications Reports, Vol. 21, May 21, 1984.

³⁰ Telephony, June 4, 1984, p. 17.

³¹ SAC point paper, "Global Shield After Action Circuit History," undated.

³² Commerce Business Daily, January 5, 1984.

³³ Commerce Business Daily, May 13, 1983.

³⁴ Ibid.

³⁵ Commerce Business Daily, November 8, 1983.

³⁶ Commerce Business Daily, January 17, 1983.

³⁷ DCA Further Reply Comments, February 24, 1983, p. 2.

³⁸ Commerce Business Daily, May 9, 1983.

³⁹ A DECCO Memorandum for record, dated November 23, 1983, stated that three vendors replied to a notice in the Commerce Business Daily concerning the SOCS upgrade. A data base search of the Commerce Business Daily, requesting all notices filed by DECCO, did not reveal the notice.

⁴⁰ Telephone conversation with Mr. George Backus, GTE Service Corporation, during May 1984.

- ⁴¹ Trademark of AT&T.
- ⁴² GTE Service Corporation letter, September 30, 1983.
- ⁴³ Ibid.
- ⁴⁴ DECCO letter, October 24, 1983.
- ⁴⁵ Ibid.
- ⁴⁶ DECCO letter, November 17, 1983.
- ⁴⁷ Attachment to DCA letter to the FCC, February 9, 1984. This attachment was extracted from the AT&T proposal to DECCO.
- ⁴⁸ Ibid.
- ⁴⁹ DECCO letter, November 23, 1983.
- ⁵⁰ DECCO letter, October 24, 1983.
- ⁵¹ GTE letter, May 15, 1984, pp. 1-3.
- ⁵² AT&T letter, December 24, 1983, and General Telephone Company of the Southwest letter, December 19, 1984.
- ⁵³ DECCO letter, February 8, 1984.
- ⁵⁴ GTE letter, May 15, 1984, p. 3.
- ⁵⁵ Ibid.
- ⁵⁶ DECCO letter, May 18, 1984.
- ⁵⁷ Discussions with personnel at Headquarters SAC during the May-June 1984 period.
- ⁵⁸ System 75 is a trademark of AT&T.
- ⁵⁹ Ibid.
- ⁶⁰ Ibid.
- ⁶¹ SAC talking paper, "SAC Rationale for Need of Single Manager," February 28, 1984.
- ⁶² LTG Winston Powers, "NSTAC: A Joint Industry/Government Entity Working on National Security/Emergency Preparedness Communications Issues," Signal, May 1984, p. 75.

⁶³National Coordinating Center Operating Charter, December 20, 1983, p. 2.

⁶⁴Ibid., p. 3.

⁶⁵Ibid.

⁶⁶Ibid.

⁶⁷Telecommunications Reports, Vol. 50, February 20, 1984, p. 13.

⁶⁸NCC Operating Charter, p. 5.

⁶⁹Ibid., pp. 7-8.

⁷⁰Proposed Initial Participants in the National Coordinating Center, Attachment to DCA Memorandum, January 9, 1984.

CHAPTER V

RECOMMENDATIONS

The time has come for SAC to "Get smart" about dealing in today's rapidly changing and competitive telecommunications environment. The days of the military communicator being able to sit back and react to the offerings of his friendly AT&T account executive are gone. When dealing with commercial services, military communicators must take an active part in the design, implementation, operations, and maintenance of both their administrative networks and their command and control networks.

Planning must be done more carefully, and begin sooner. Colonel George Bolling, formerly a Research Fellow at the National Defense University and now on the staff of the Deputy Undersecretary of Defense for Command, Control, Communications, and Intelligence, has written:

Often, Defense communicators are their own worst enemies. In their zeal to satisfy the users they serve, they often circumvent established procedures, taking shortcuts to meet demanding deadlines. As a result, they often overlook important aspects of engineering. AT&T has often come to their rescue when an emergency or even a mistake necessitated prompt service. ... An emergency is one thing; failure to plan is another. ... The leasing of commercial services can no longer be assumed to be automatic. 1

The burden is on the military communicator to adapt. LTG Winston Powers, Director of the Defense Communications Agency and

the Manager of the National Communications System, has said

In my view, we have an opportunity to influence our future and the way we do business. We must accept the challenge of working with the myriad of telecommunications vendors to provide us with the service we so vitally need for the critical telecommunications requirements of the Federal Government. ... The explosive growth of communications technology, and the new, competitive industry environment will make available a much greater diversity of telecommunications alternatives. We must train our people to take advantage of these opportunities. We will need bright people, trained in new skills and disciplines, to exploit those opportunities. We will also need people who can provide new perspectives in the management and system control of the many new networks that will be possible. 2

The Example of the Private Sector

When it comes to procuring effective communications, military communicators can learn a lesson from their private counterparts. Large corporations have frequently developed their own networks, often using that anathema to military communicators, "fragmented procurement." The result of taking this responsibility for their own communications has been better service at less cost.

During my year here at the University of Colorado, telecommunications managers from private industry have described how they have been able to install private networks with the capability for continuous monitoring of circuits and equipment. From centralized control centers, their personnel can detect an outage, take the necessary action to restore service using backup equipment, and notify the proper vendor to correct the problem.

In 1984, Mr. Bernard Overeynder, Manager, Telecommunications Planning and Operations for Xerox Corporation, described his company's

network to the students of the University of Colorado's Telecommunications Program. He discussed how his company's telecommunications control center could remotely determine the cause of an outage in Xerox's worldwide network, and initiate restoral action. Mr. Overeynder also stated that they leased private lines from both AT&T and MCI. When asked about the responsiveness of MCI in the event of an outage, he stated that while MCI's average response time was longer than AT&T's, MCI did meet the requirements laid on them.

This approach offers several advantages, as well as disadvantages, over the single system manager concept. The single management concept was valid and responsive when there was "One Nation, One Phone Company." When AT&T controlled the nation's long-distance service, controlled the attachment of customer premise equipment, controlled the Bell Operating Companies, and was "big brother" to the independents, single system management by AT&T was responsive to SAC. Now that AT&T can only serve as the "broker," the responsiveness has decreased. There have been cases where AT&T and the local telephone companies have engaged in "fingerpointing" over the responsibility for lost and confused orders. Even when AT&T is the provider of the service, they have been unresponsive. Example: For a special assembly, American Bell quoted a non-recurring charge of \$10,000 with service in 90 days. Four months later, American Bell said they could provide the service in 310 hours at a cost of \$20,150.³

However, single system management did have several advantages. Single system management reduces the need for government manpower, re-

duces billing problems, and requires the government to take more responsibility for contract writing, testing, and operations. But it has the potential to provide the most responsive method of meeting the needs for command control.

The New SAC Network

I propose that SAC immediately begin to plan to take responsibility for their command and control system on an end-to-end basis themselves, rather than relying on AT&T.

The heart of this new SAC network will be a control center at Offutt, with alternate centers at each of the SAC Numbered Air Forces. Manned by Air Force personnel, these centers should have the capability to continuously monitor, troubleshoot, and perform remote alternate routing on the command and control systems which use commercial services. Access to computer data base resources will be required, so that management information on performance can be entered and recalled in a timely manner.

Initially, an evaluation should be done of the existing leased command and control systems, to determine if new, but proven, technology could be used to improve the performance or cost-effectiveness of the systems. For those systems which could be improved, request for proposal (RFP) packages for equipment should be drawn up, and proposals from all potential vendors solicited. Every effort should be made to allow the maximum amount of vendor participation, consistent with operational requirements.

The RFPs should require that the systems have the capability to perform fault isolation and remote maintenance on any part of the network. The proposals received should be impartially evaluated for technical and operational sufficiency, cost, and the capability of the vendor to provide the service.

Circuits should also be leased on the same basis. If the alarm system in the network is properly designed, personnel in the network control center should be able to quickly determine which part of the network is causing the outage, and which vendor should be notified.

The control centers, and the staff offices supporting them, will need to be manned by engineers, computer analysts, and technicians, capable of performing network analysis and restoral actions. The staff office supporting the center must also include engineers, computer analysts, and technicians, as well as personnel experienced in contracting actions, and the evaluation of proposals. I do not intend that this office take over any of the functions of DECCO, only that the operational personnel have the people with the necessary expertise available on-site and responsive to them.

This approach will tend to eliminate the existing and expected "fingerpointing." Properly designed remote testing puts the SAC communicator "on-site," able to determine whether the circuit vendor or equipment vendor needs to respond.

I realize this approach will not be easy to implement. Personnel with these skills are in short supply, paperwork will increase,

and funding will be a problem. I also recognize that finding space at Offutt for such a facility will be difficult. But I believe this approach offers the best hope for SAC to retain responsive command and control, at a reasonable price. And the sooner SAC begins planning for its own network control, the sooner it can reap the benefits.

Computer Inquiry II Waiver

Currently, the FCC is considering modifying its current waiver of Computer Inquiry II for national security and emergency preparedness circuits. I believe that the performance of the NCC should be evaluated prior to extending the waiver. If the NCC is not responsive, then and only then should any waiver be given. If that is the case, I believe the FCC should allow Bell Communications Research to serve as the industry-wide point of contact. Since Bell Communications Research represents a group of operating companies, rather than being a part of AT&T, it will offer a means of meeting the government's needs without giving a customer premise equipment vendor or a long-distance carrier an unfair advantage.

NOTES - CHAPTER V

¹George Bolling, AT&T: Aftermath of Antitrust, p. 113.

²LTG Winston D. Powers, Director, DCA and Manager, DCS, to the Washington Chapter of the Armed Forces Communications & Electronics Association, February 9, 1984.

³SAC message, "Responsiveness of Commercial Telecommunications Industry," May 21, 1984.

CHAPTER VI

CONCLUSION

The country, the Department of Defense, and the Strategic Air Command have experienced a major upheaval in how their telecommunications needs are met.

I have discussed how SAC uses commercial communications services to meet a portion of its command and control needs, how the regulatory environment has changed in recent years, shown how SAC has been affected by these changes, and offered a means by which SAC can change to most effectively meet its needs.

This problem extends beyond SAC to the other military commands. Other commands have experienced problems similar to SAC's, and simply reinforce this thesis -- adapt to this change in a way which maximizes the benefits to national security.

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